WHAT IS CLAIMED IS:

1. DNA encoding a tumor antigen-derived gene (TADG-15) protein, selected from the group consisting of:

(a) isolated DNA which encodes a TADG-15 protein;

(b) isolated DNA which hybridizes under high stringency conditions to the isolated DNA of (a) above and which encodes a TADG-15 protein; and

(c) isolated DNA differing from the isolated DNAs of (a) and (b) above in codon sequence due to the degeneracy of the genetic code, and which encodes a TADG-15 protein.

2. The DNA of claim 1, wherein said DNA has the sequence shown in SEQ ID No. 1.

3. The DNA of claim 1, wherein said TADG-15 protein has the amino acid sequence shown in SEQ ID No. 2.

4. A vector comprising the DNA of claim 1 and regulatory elements necessary for expression of said DNA in a cell.

5. The vector of claim 4, wherein said DNA encodes a TADG-15 protein having the amino acid sequence shown in SEQ ID No. 2.

6. The vector of claim 4, wherein said DNA is positioned in reverse orientation relative to said regulatory elements such that TADG-15 antisense mRNA is produced.

7. A host cell transfected with the vector of claim 4, said vector expressing a TADG-15 protein.

8. The host cell of claim 7, wherein said cell is selected from the group consisting of bacterial cells, mammalian cells, plant cells and insect cells.

9. The host cell of claim 8, wherein said bacterial cell is *E. coli*.

10. Isolated and purified TADG-15 protein coded for by DNA selected from the group consisting of:

(a) isolated DNA which encodes a TADG-15 protein;

(b) isolated DNA which hybridizes under high stringency conditions to isolated DNA of (a) above and which encodes a TADG-15 protein; and

(c) isolated DNA differing from the isolated DNAs of (a) and (b) above in codon sequence due to the degeneracy of the genetic code, and which encodes a TADG-15 protein.

11. The TADG-15 protein of claim 10, wherein said protein has the amino acid sequence shown in SEQ ID No. 2.

12. A method for detecting TADG-15 mRNA in a sample, comprising the steps of:

(a) contacting a sample with a probe, wherein said probe is specific for TADG-15; and

(b) detecting binding of said probe to TADG-15 mRNA in said sample.

13. The method of claim 12, wherein said sample is a biological sample.

14. The method of claim 13, wherein said biological sample is from an individual.

15. The method of claim 14, wherein said individual is suspected of having cancer.

16. A kit for detecting TADG-15 mRNA, comprising:

an oligonucleotide probe, wherein said probe is specific for TADG-15.

17. The kit of claim 16, further comprising:

a label with which to label said probe; and

means for detecting said label.

18. A method of detecting TADG-15 protein in a sample, comprising the steps of:

(a) contacting a sample with an antibody, wherein said antibody is specific for TADG-15 or a fragment thereof; and

(b) detecting binding of said antibody to TADG-15 protein in said sample.

19. The method of claim 18, wherein said sample is a biological sample.

20. The method of claim 19, wherein said biological sample is from an individual.

21. The method of claim 20, wherein said individual is suspected of having cancer.

22. A kit for detecting TADG-15 protein, comprising:

an antibody, wherein said antibody is specific for TADG-15 protein or a fragment thereof.

23. The kit of claim 22, further comprising:

means to detect said antibody.

24. An antibody, wherein said antibody is specific for TADG-15 protein or a fragment thereof.

25. A method of screening for compounds that inhibit TADG-15, comprising the steps of:

(a) contacting a sample with a compound, wherein said sample comprises TADG-15 protein; and

(b) assaying for TADG-15 protease activity, wherein a decrease in said TADG-15 protease activity in the presence of said compound relative to TADG-15 protease activity in the absence of said compound is indicative of a compound that inhibits TADG-15.

26. A method of inhibiting expression of TADG-15 in a cell, comprising the step of introducing the vector of claim 6 into a cell, wherein expression of said vector produces TADG-15 antisense

mRNA in said cell, wherein said TADG-15 antisense mRNA hybridizes to endogenous TADG-15 mRNA, thereby inhibiting expression of TADG-15 in said cell.

27. A method of inhibiting a TADG-15 protein in a cell, comprising the step of introducing an antibody into a cell, wherein said antibody is specific for a TADG-15 protein or a fragment thereof, wherein binding of said antibody to said TADG-15 protein inhibits said TADG-15 protein.

28. A method of targeted therapy to an individual, comprising the step of:

(a) administering a compound to an individual, wherein said compound has a targeting moiety and a therapeutic moiety, wherein said targeting moiety is specific for TADG-15.

29. The method of claim 28, wherein said targeting moiety is selected from the group consisting of an antibody specific for TADG-15 and a ligand or ligand binding domain that binds TADG-15.

30. The method of claim 28, wherein said therapeutic moiety is selected from the group consisting of a radioisotope, a toxin, a chemotherapeutic agent, an immune stimulant and a cytotoxic agent.

31. The method of claim 28, wherein said individual suffers from ovarian cancer, lung cancer, prostate cancer, colon cancer and other cancers in which TADG-15 is overexpressed.

32. A method of diagnosing cancer in an individual, comprising the steps of:

(a) obtaining a biological sample from an individual;

(b) detecting TADG-15 in said sample,

wherein the presence of TADG-15 in said sample is indicative of the presence of carcinoma in said individual, wherein the absence of TADG-15 in said sample is indicative of the absence of carcinoma in said individual.

33. The method of claim 32, wherein said biological sample is selected from the group consisting of blood, urine, saliva, tears, interstitial fluid, ascites fluid, tumor tissue biopsy and circulating tumor cells.

34. The method of claim 32, wherein said detection of said TADG-15 is by means selected from the group consisting of Northern blot, Western blot, PCR, dot blot, ELIZA sandwich assay, radioimmunoassay, DNA array chips and flow cytometry.

35. The method of claim 32, wherein said carcinoma is selected from the group consisting of ovarian, breast, lung, colon, prostate and others in which TADG-15 is overexpressed.

36. A method of vaccinating an individual against TADG-15, comprising the steps of:

inoculating an individual with a TADG-15 protein or fragment thereof, wherein said TADG-15 protein or fragment thereof

lacks TADG-15 protease activity, wherein said inoculation with said TADG-15 protein or fragment thereof elicits an immune response in said individual, thereby vaccinating said individual against TADG-15.

37. The method of claim 36, wherein said individual has cancer, is suspected of having cancer or is at risk of getting cancer.

38. The method of claim 36, wherein said TADG-15 fragment is selected from the group consisting of a 9-residue fragment up to a 20-residue fragment.

39. The method of claim 38, wherein said 9-residue fragment is selected from the group consisting of SEQ ID Nos. 2, 19, 20, 21, 29, 39, 49, 50, 59, 79, 80, 81, 82, 83, 84, 89 and 90.

40. A method of producing immune-activated cells directed toward TADG-15, comprising the steps of:

exposing dendritic cells to a TADG-15 protein or fragment thereof, wherein said TADG-15 protein or fragment thereof lacks TADG-15 protease activity, wherein said exposure to said TADG-15 protein or fragment thereof activates said dendritic cells, thereby producing immune-activated cells directed toward TADG-15.

41. The method of claim 40, wherein said immune-activated cells are selected from the group consisting of B-cells, T-cells and dendrites.

42. The method of claim 40, wherein said TADG-15 fragment is selected from the group consisting of a 9-residue fragment up to a 20-residue fragment.

43. The method of claim 42, wherein said 9-residue fragment is selected from the group consisting of SEQ ID Nos. 2, 19, 20, 21, 29, 39, 49, 50, 59, 79, 80, 81, 82, 83, 84, 89 and 90.

44. The method of claim 40, wherein said dendritic cells are isolated from an individual prior to said exposure, wherein said activated dendritic cells are reintroduced into said individual subsequent to said exposure.

45. The method of claim 44, wherein said individual has cancer, is suspected of having cancer or is at risk of getting cancer.

46. An immunogenic composition, comprising an immunogenic fragment of a TADG-15 protein and an appropriate adjuvant.

47. The immunogenic composition of claim 46, wherein said fragment is selected from the group consisting of a 9-residue fragment up to a 20-residue fragment.

48. The immunogenic composition of claim 47, wherein said 9-residue fragment is selected from the group consisting of SEQ ID Nos. 2, 19, 20, 21, 29, 39, 49, 50, 59, 79, 80, 81, 82, 83, 84, 89 and 90.

49. An oligonucleotide having the nucleotide sequence complementary to a sequence of claim 1.

50. A composition comprising the oligonucleotide according to claim 49 and a physiologically acceptable carrier therefore.

51. A method of treating a neoplastic state in an individual syndrome in an individual in need of such treatment, comprising the step of administering to said individual an effective dose of the oligonucleotide of claim 49.

52. The method of claim 51, wherein said neoplastic state is selected from the group consisting of ovarian cancer, breast cancer, lung cancer, colon cancer, prostate cancer and other cancers in which TADG-15 is overexpressed.